

**IMAGES IN EMERGENCY MEDICINE**

## Toxicology

**Elderly male with nausea and vomiting**Gayle M. Galletta MD 

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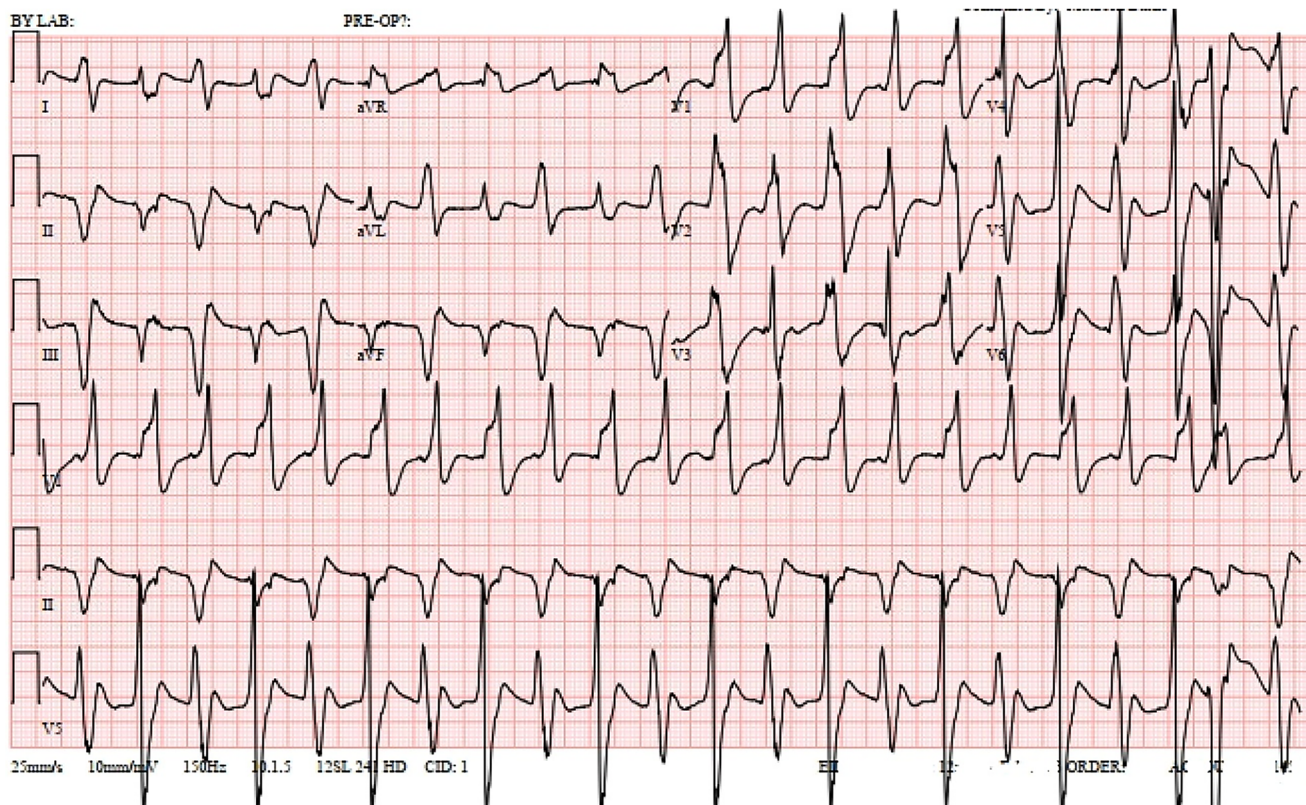
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Email: [gayle.galletta@gmail.com](mailto:gayle.galletta@gmail.com)**1 | PATIENT PRESENTATION**

A 75-year-old male with a history of atrial fibrillation, type 2 diabetes, congestive heart failure, and cardiomyopathy presented with 1 day history of nausea and vomiting. On physical examination, the patient was afebrile with a blood pressure of

103/59 mm Hg, heart rate of 107, respiration 12, and oxygen saturation 98% on room air. He was frail appearing and awake but confused with pupils at 4 mm. His heart was tachycardic, lungs clear to auscultation, and abdomen soft and non-tender. Neurological examination revealed generalized weakness but was non-focal.

**FIGURE 1** ECG demonstrating bidirectional ventricular tachycardia. Abbreviation: ECG, electrocardiogram.

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## 2 | DIAGNOSIS

### 2.1 | Digoxin toxicity

An electrocardiogram (ECG) was obtained (Figure 1), which demonstrated a rare example of bidirectional ventricular tachycardia (BiVT), which is most commonly seen with digoxin toxicity. It can also be caused by catecholaminergic polymorphic ventricular tachycardia (a genetic dysrhythmia induced by exercise, physical, or emotional stress), acute myocardial ischemia, ischemic cardiomyopathy, myocarditis, and cardiac sarcoidosis.<sup>1</sup> On further questioning, the patient admitted to overdosing on his apixaban, digoxin, and dapagliflozin 24 hours prior. His digoxin level was markedly elevated at 7.2 ng/mL. He had a normal renal function and blood glucose. The patient was treated with 2 doses of digoxin immune fab with improvement in his symptoms.

Digoxin is derived from the foxglove plant. Its positive inotropic effects are used to improve systolic function in patients with congestive heart failure, and its atrioventricular nodal blocking effect is used to control atrial tachydysrhythmias.<sup>2</sup> It has a narrow therapeutic window and is renally excreted. Signs and symptoms of digoxin toxicity

include confusion, decreased appetite, nausea, vomiting, diarrhea, and visual changes (rare). BiVT is a rare finding, but highly suggestive of digoxin toxicity.

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#### REFERENCES

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2. Cummings ED, Swoboda HD. Digoxin toxicity. [Updated 2023 Mar 4]. In: *StatPearls [Internet]*. StatPearls Publishing; 2023. <https://www.ncbi.nlm.nih.gov/books/NBK470568/>

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